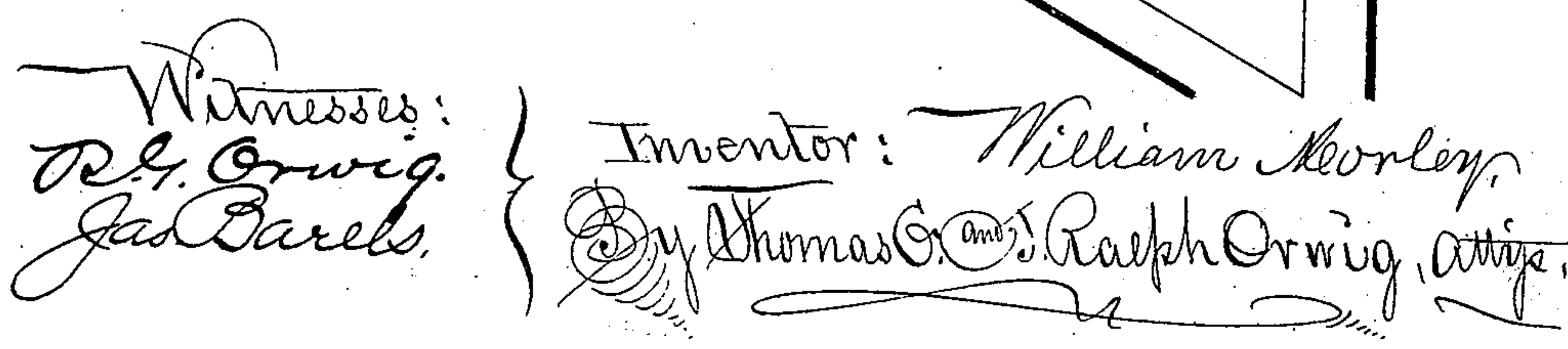


Patented Jan. 2, 1900.

(Application filed May 29, 1897.)

(No Model.)



UNITED STATES PATENT OFFICE.

WILLIAM MORLEY, OF FONTANELLE, IOWA.

BAND-CUTTER AND FEEDER.

SPECIFICATION forming part of Letters Patent No. 640,684, dated January 2, 1900.

Application filed May 29, 1897. Serial No. 638,677. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MORLEY, a citizen of the United States, residing at Fontanelle, in the county of Adair and State of Iowa, have invented a new and useful Improvement in Band-Cutters and Feeders, of which the following is a specification.

This invention relates to certain improvements in band-cutters and self-feeders for threshing-machines, and particularly to the improvement of the means for controlling the speed of the endless conveyer that leads to the cylinder in proportion to and controlled by the depth of the grain upon the said endless conveyer; and my present invention is in the nature of an improvement upon the mechanism for the same purpose invented by me and fully disclosed in Letters Patent No. 573,898, issued to myself, bearing date of December 29, 1896.

The object of my present invention is to provide improved mechanism for automatically regulating the speed of the endless conveyer of the self-feeder in proportion to the depth of the grain carried by the feeder in a simpler, cheaper, and better manner than has been done heretofore.

My invention consists in certain details in the construction, arrangement, and combination of parts whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a top or plan view of a portion of the band-cutter and self-feeder with my improved regulating device thereon and also showing by dotted lines the position of the connected parts beneath the top of the machine-frame. Fig. 2 shows a longitudinal section of the same through the indicated line 2 2 of Fig. 1.

Referring to the accompanying drawings, the frame of the band-cutter and self-feeder is indicated by the reference-numeral 10 and may be of any desirable construction. At its top is a platform 11, upon which the regulating mechanism is fixed.

The reference-numeral 12 is used to indicate the endless conveyer, which is also of ordinary construction and which is passed over the sprockets 13 on the shaft 12, from

which it receives its driving power, and also passed over sprockets 14 and 15, which serve to hold it in position.

The reference-numeral 16 indicates a shaft rotatably mounted in the machine-frame above the endless conveyer and having thereon the band-cutting knives 17. On one end of this shaft is a pulley 18, to which a belt 19^a is attached and which is connected with a belt-wheel on the threshing-machine. The power is transmitted from this shaft of the band-cutting knives to the endless conveyer indirectly, and the mechanism for regulating the speed at which the endless conveyer is driven is located on the top of the machine-frame above the rear end of the endless conveyer, and comprises a shaft 19, mounted in suitable bearings upon the top platform 11, and fixed thereto near the central portion of the platform is a cone 20, which may be made of wood or metal. This shaft 19 is provided with a pulley-wheel 21 on its end, which pulley is connected with a pulley 22 on the end of the shaft that carries the band-cutting knives by means of a belt 23, so that it will be constantly rotated at a uniform speed during the operation of the threshing-machine. The reference-numeral 24 indicates a like shaft mounted in suitable bearings on the top of the machine-frame and somewhat nearer the rear end of the frame than the other shaft and extended parallel therewith. 25 indicates a cone, of approximately the same size and shape as the cone previously described, fixed to this shaft and adjacent to the other cone. A sprocket-wheel 26 is fixed to the end of this shaft, and a chain 27 connects this sprocket-wheel with a sprocket 28 on the end of the driving-shaft of the endless conveyer.

The reference-numeral 29 indicates a belt connecting the driving and the driven cone, and it is obvious that the speed of the driven cone will be varied relative to the speed of the driving-cone as the position of the belt relative thereto is shifted in a direction longitudinal of the cone. I have provided means for automatically shifting this belt 29, to be governed by the depth of grain upon the endless conveyer, as follows:

The reference-numeral 30 indicates a shaft mounted in the machine-frame in the rear of the cutting-knives and above the endless

conveyer, and to this shaft I have fixed a number of rearwardly-projecting arms 31, the rear or lower ends of which normally assume a position a slight distance above the rear
 5 end of the endless conveyer. The reference-numeral 32 indicates an arm fixed to the said shaft and projected upwardly through the platform 11.

33 indicates a flat bar having a series of
 10 openings 34 therein, to which the arm 32 is adjustably connected.

35 indicates a standard mounted upon the platform 13, and 36 indicates a bell-crank lever pivoted to the said standard and having
 15 its one end pivotally connected with the bar 33 and its other end projected straight rearwardly and having a downwardly-projecting fork 35 thereon, which fork is extended into a position where it will overlap the sides of
 20 the belt. 36 indicates rollers fixed to the prongs of said fork to engage the edges of the belt and minimize the friction of the belt against the fork.

By means of the construction shown and
 25 described all of the machinery necessary for transmitting motion from the driving to the driven shaft on top of the platform comprises two straight shafts and two cones fixed there-
 30 to and a belt for connecting the cones. In the said former patent the means for transmitting motion from the driving to the driven shaft was very complicated and expensive, for the reason that it was necessary to use a
 35 universal joint in one of the shafts, a cone made of metal and accurately turned, and a rubber-coated brush-wheel to engage the cone and capable of sliding longitudinally upon its shaft. With the mechanism just described
 40 and embodied in the said former patent the brush-wheel soon became worn, and, furthermore, the rust upon its shaft would often prevent a free sliding motion thereon, and thereby the objects of the regulator were defeated. With the device shown in the present appli-
 45 cation the two cones may, if desired, be made of wood, and the shafts to which they are fixed are straight and mounted in ordinary bearings, and the belt which connects the two may be easily and quickly moved at
 50 any time, and none of the parts are liable to become quickly worn out or displaced, and

it is obvious this improved result is accomplished by means of the improved element in the combination—to wit, the lever having
 55 a fork on its free end and carrying rollers to engage and control the movements of the belt relative to the two parallel shafts that carry the cones.

I am aware that heretofore two cones extended in opposite directions have been con-
 60 nected by a belt and means provided for shifting the belt for the purpose of changing the relative speed of the cones, and in my former patent hereinbefore referred to I have shown arms projecting over the conveyer, 65 which when elevated by the grain on the conveyer will set in motion means for changing the speed of the conveyer; but I am not aware that heretofore there has been a speed-regulating device of this class combined with the
 70 means for regulating the speed from the depth of grain upon the conveyer, and by means of this combination I have produced a simpler, cheaper, and more durable speed-regulator that is direct and positive in its action and in
 75 which there are few parts liable to become broken or misplaced.

Having thus described the construction, arrangement, and function of each of the various parts of the device, what I claim as my
 80 invention is—

The combination with a band-cutter and feeder having an endless conveyer, of a speed-regulating device for the conveyer comprising a shaft 30 above the conveyer, arms 31
 85 fixed thereto a rod 32 fixed to the said shaft, a bar 33 connected with the arm 32, a bell-crank lever 36 fulcrumed to the top of the machine-frame, rollers on the said lever to engage opposite sides of a belt, a shaft 19 at
 90 the top of the machine-frame, means for connecting it with the shaft of the band-cutter knives, a second shaft 24 adjacent to the first, a cone 25 thereon, means for connecting this shaft with the shaft of said conveyer, a belt
 95 connecting the cones to be engaged by said rollers, substantially as and for the purposes stated.

WILLIAM MORLEY.

Witnesses:

REUBEN G. ORWIG,
 THOMAS G. ORWIG.